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NEW SPECIES OF CARIDEA FROM THE BERMUDAS[1]

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The Bermuda material on which this report is based was collected by the author during a stay at the Bermuda Biological Station in the summer of 1938. A specimen of *Crangon togatus* taken at Barahona, Santo Domingo, during the summer of 1933, being in better condition than any of the Bermuda material, has been used as the type of that species and the Bermuda examples designated as paratypes.

CRANGONIDAE

Crangon peasei, new name

Alpheus transverso-dactylus KINGSLEY, 1878, Bull. U. S. Geol and Geog. Sur., IV, p. 196 (part).

Alpheus dentipes COUTIÈRE (not Guérin), 1899, Ann. Sci. Nat. Zool., (8) IX, p. 29 (part).

Alpheus candei RANKIN (not Guérin), 1900, Ann. N. Y. Acad. Sci., XII, p. 541.

Alpheus dentipes RATHBUN (not Guérin), 1901, Bull. U. S. Fish Comm., XX for 1900, part 2, p. 105.

Alpheus or *Crangon candei* VERRILL (not Guérin), 1922, Trans. Conn. Acad. Arts and Sci., XXVI, p. 68, Text Fig. 5b, Pl. 19, fig. 3a–d, Pl. 20, fig. 1, Pl. 21, figs. 6, 6a, Pl. 24, figs. 2–4, Pl. 29, fig. 1a–t. (Not Pl. 25, figs. 7, 8.)

Crangon candei SCHMITT (not Guérin), 1924, Bij. Dier., XXIII, p. 64; 1924, Iowa St. Nat. Hist., X, No. 4, p. 69; 1935, N. Y. Acad. Sur. Porto Rico and Virg. Isls., XV, pt. 2, p. 143; 1936, Zool. Jahrb., LXVII, p. 367.

TYPE.—1 ♂ Cat. No. A.M.N.H. 8184 from Castle Harbor Reefs, Bermuda. Carapace 8 mm. long.

PARATYPES.—22 ♂, 10 ♀ (9 ovig.) (Cat. No. A.M.N.H. 8186), from Grazbury's Isl. 8 ♂, 9 ♀ ovig., reefs in Castle Harbor, Bermuda. 2 ♂, 2 ♀ ovig., reefs outside St. David Isl., Bermuda. 6 ♂, 6 ♀ (5 ovig.), the Reach, St. George Isl., Bermuda. 1 ♂, 1 ♀ ovig., reefs outside Town Cut, St. George Isl., Bermuda.

DESCRIPTION.—Rostrum keeled, falling short of the second antennular segment by 0.25 of the length of that segment. Frontal margin sinuous between the rostrum and the orbital hoods. Orbital hoods armed with an acute spine which falls short of the end of the rostrum by about 0.3 of the length of the rostrum.

Telson 1.5 times as long as wide proximally; 2.9 times as long as wide distally.

Spine of stylocerite extending nearly to the end of the first antennular article. Length of the first, second and third antennular articles in the following ratio: 1:1.6:0.8.

Spine of basicerite extending beyond the end of the first antennular segment by 0.4 of the length of that segment. Lateral spine of scaphocerite reaching to the end of the antennular peduncle. Its narrow scale reaches to the end of the second antennular segment. Carpocerite exceeding antennular peduncle by 0.5 of the length of the last antennular segment.

Merus of major chela, 2 times as long as wide, usually armed with a minute, acute infero-distal tubercle. Chela 2.5 times as long as wide; 3.3 times as long as fingers. The movable finger is obliquely articulated and bears no high crest on its upper margin in either sex.

Merus of smaller chela 1.9 times as long as wide and occasionally armed with a minute, acute infero-distal tubercle. Chela 3 times as long as wide; 2.2 times as long as fingers and bearing a large spine on the outer face at the base of the articulation of the dactyl. Edges of fingers meeting when closed. Movable finger without a high crest on its upper margin in either sex.

First, second, third, fourth and fifth carpal segments of the second pair of chelae in the following ratio: 1:0.8:0.34:0.38:0.5.

Merus of third legs 3.6 times as long as wide; armed with a strong infero-distal spine. Ischium of 3rd and following legs unarmed. Dactyls of last three legs simple.

This species is first mentioned in the literature in 1878 when Kingsley (p. 196) confused it with his *transvero-dactylus*, a synonym of the West Coast species *clamator* (Lockington), while his *clamator* of the same paper (p. 197) is *barbara* (Lockington). Coutière (1899, p. 29) considered both *candei* (Guérin) and *clamator* (Lockington)

[1] A contribution from the Bermuda Biological Station.

to be synonyms of *dentipes* (Guérin), a distinct European species. With these he also (p. 43) united Stimpson's *streptochirus* and Spence Bate's *cristidigitus* both from the Cape Verde Islands and properly synonyms of *dentipes* (Guérin). Holmes (1900, p. 486) separates the West Coast species as Lockington's *clamator* and points out a number of discrepancies between Guérin's description of *candei* and the characters of the West Coast species. In 1910 (p. 486), Coutière separates *dentipes* and *candei* giving a brief description of *candei* but without comparing the two, merely stating that he believed to have rediscovered Guérin's West Indian species. Hilton (1916, p. 67) and Schmitt (1921, p. 74) again united these three species, *candei*, *dentipes* and *clamator*, although without giving any reason for so doing. Verrill (1922, p. 69), having examined the type of Kingsley's *transverso-dactylus*, recognized the distinction between the East and West Coast forms, giving a comparison of the chelae.

The East Coast species in question has the merus of the third and fourth legs armed with a strong infero-distal spine while Guérin's description of *candei* states "Les cuisses des troisième et quatrième pattes n'ont pas de dents." (1856, p. L.) Coutière (1910, p. 486) in identifying his Tortugas specimen with Guérin's *candei* gives a figure of the third leg as unarmed. Schmitt (1924, p. 69) states that a re-examination of Coutière's specimen shows the presence of a meral spine on the third leg. Upon careful examination this proved, however, to be but the broken end of the propodus. Dr. Schmitt, having re-examined the specimen, agrees with this new interpretation. This species also differed from Coutière's specimen in the shape of the fingers of the major chela. While these are somewhat variable in the shape, I have not seen any as narrow and pointed as those of Coutière's specimen. It seems, therefore, that as Coutière's specimen agrees well with Guérin's description of *candei*, the West Atlantic species with the meral spine on the third and fourth legs must be given a new name for which I suggest *C. peasei*.

C. peasei is found from Bermuda to Curaçao and is one of the commonest West Indian crangonids while *candei* is known only from Guérin's type from Cuba and Coutière's specimen from Key West, Florida.

Both *peasei* and *candei* are quite distinct from the European species *dentipes* (Guérin) and may be at once distinguished by the high crest on the upper edge of the small chela of the male of *dentipes*, both *candei* and *peasei* lacking this crest. The Pacific species *Crangon collumianus* (Stimpson) also resembles *peasei* very closely but may be distinguished by the large spine in the ischium of the third and following legs.

Along with *candei* and *dentipes*, Coutière (1899, p. 34) also synonymized a species described by Miers (1881, p. 74) as *Alpheus* sp. (?) from Portland Bay in Concèpcion Canal on the west coast of Chile. Of this last Miers says "The small hand is also notched on its upper and lower margins, the dactylus is flattened, ovate and clothed in long hairs: there is a spine at the distal end of the third (but not the second) joint of the third and fourth legs." The meral spine on the third and fourth legs at once separates *candei* from this species while the characters given for the small hand serve to distinguish it from *peasei* and *clamator* and to approach it to *dentipes*. No certain identification is possible with this species but it seems unlikely that *dentipes*, a European species, should be found on the southwest coast of Chile.

Crangon togatus, new species

Figure 1 A–G

TYPE.—1 ♀ (Cat. No. A.M.N.H. 8195), Piedra Prieta Reef, Barahona, St. Domingo. Carapace, 4 mm. long.

CO-TYPE.—1 ♀ (Cat. No. A.M.N.H. 8187), Grazbury's Isl., Bermuda.

PARATYPES.—1 ♀ (Cat. No. A.M.N.H. 8188), reefs in Castle Harbor, St. George Isl., Bermuda. 1 ♀, Long Bird Isl., Bermuda. 1 ♀, Grazbury's Isl., Bermuda.

DESCRIPTION.—Rostrum, flattened, triangular, falling short of the first segment of the antennular peduncle and not continued back on the carapace as a carina. Orbital hoods rounded, unarmed.

Telson 3 times as long as the width of the distal base.

Spine of the stylocerite reaching almost to

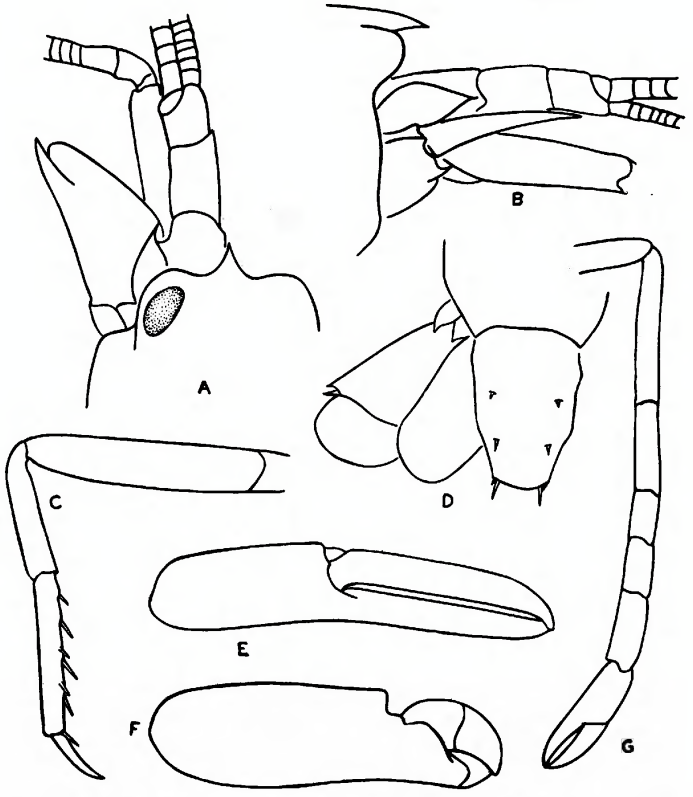

Fig. 1. *Crangon togatus*, new species. A, Frontal structures, dorsal view; B, frontal structures lateral view; C, third leg; D, telson; E, small chela; F, large chela; G, second leg.

the end of the first antennular segment. First, second and third antennular segments in the following proportions: 1:0.6:0.48.

Spine of basicerite falling slightly short or just reaching to the oblique articulation between the merocerite and the carpocerite when viewed laterally.

Spine of scaphocerite falling short of the carpocerite, being equal to or slightly shorter than the antennular peduncle. Spine a little longer than the scale. Carpocerite reaching to the end of or slightly exceeding the antennular peduncle.

Merus of larger chela 2.3 times as long as wide, armed with an acute infero-distal spine. Chela 3.2 times as long as wide: 3 times as long as fingers. Chela sub-cylindrical, without grooves. Upper margin of dactyl crescent-shaped.

Merus of smaller chela 4.6 times as long as wide. Chela 4.5–5 times as long as wide; 1.5–1.9 times as long as the slender, cylindrical fingers whose tips cross when closed. Smaller chela about 0.5 of the length of the larger.

The first, second, third, fourth and fifth carpal segments of the second chela are in the following proportions: 1:0.66:0.33:0.33:0.5.

Merus of the third legs unarmed; 5 times as long as wide. Dactyls of the last three legs simple.

Discussion.—*C. togatus* appears to be most closely related to *C. ascencionis* (Ortmann) (1893, p. 45), which, as the name implies, comes from Ascencion Island in the South Atlantic. From this species it differs in that the spine of the basicerite is better developed, reaching to the articulation between the merocerite and the carpocerite while that of *ascencionis* is given as "entirely rudimentary." Also the fingers of the major chela are only a little less than half (0.48) as long as the palm while those of *ascencionis* are given as "only about 1/3 as long as the palm." *C. togatus* is also related to *C. alpheopsides* (Coutière) (1905, p. 901). From this species it may at once be distinguished by the shorter fingers of the major chela; those of *alpheopsides* being equal to or longer than the palm in length.

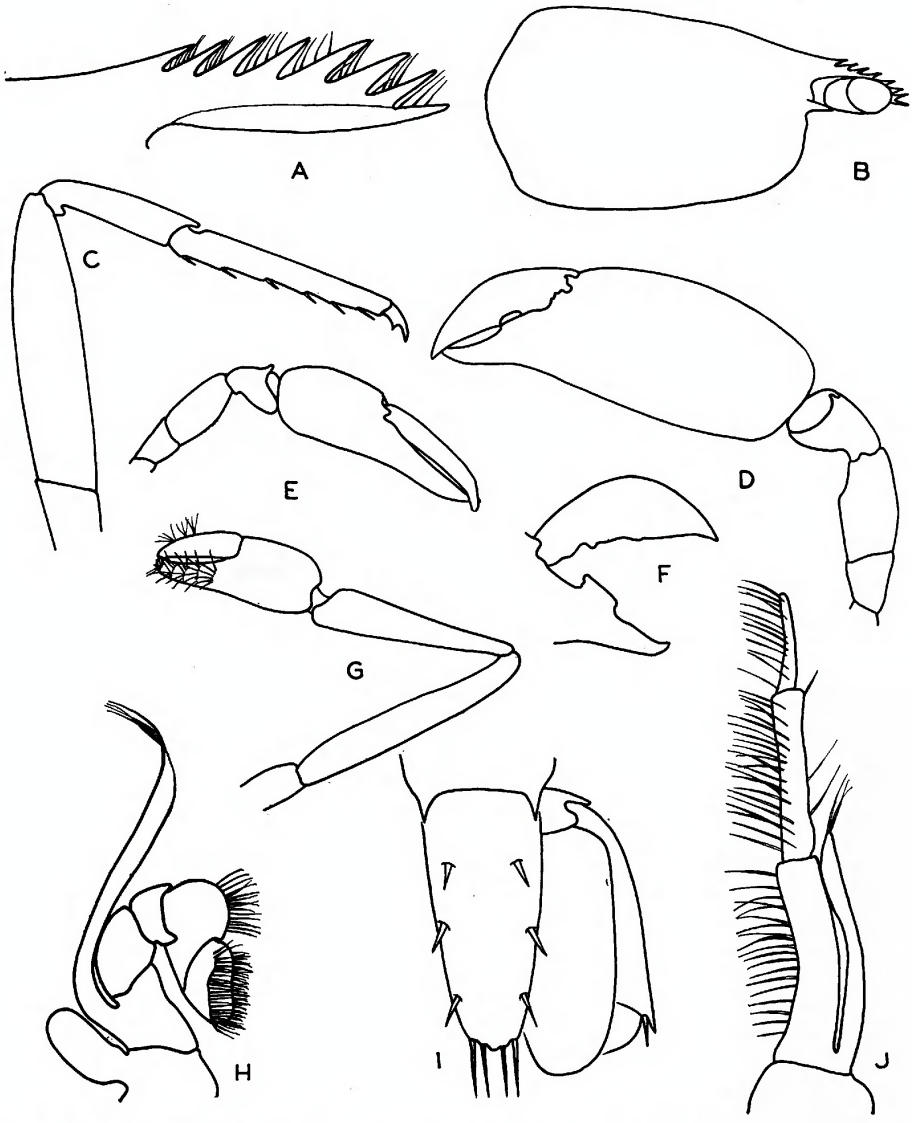

Fig. 2. *Periclimenes* (*Periclimenaeus*) *bermudensis*, new species. A, Rostrum; B, carapace in lateral view; C, third leg; D, larger chela of second pair; E, smaller chela of second pair; F, fingers of larger chela of second pair; G, right chela of first pair; H, second maxilliped; I, telson and uropods; J, third maxilliped.

PALAEMONIDAE

Periclimenes (Periclimenaeus) bermudensis, new species

Figures 2 A–J, 3 A–G

TYPE.—1 ♀ ovig. (Cat. No. A.M.N.H. 8189), from inside black sponge living alongside *Synalpheus goodei* Coutière, the Reach, St. George Isl., Bermuda. Length of carapace, 7 mm. Total length, 1.7 mm.

CO-TYPE.—1 ♀ ovig. (Cat. No. A.M.N.H. 8190.) Same locality as above.

PARATYPE.—2 ♀ ovig. (Cat. No. A.M.N.H. 8191.) Same locality as above.

DESCRIPTION.—Carapace stout, with antennal but no hepatic or supra-orbital spine. Rostrum short, about 0.5 as long as the carapace, slightly deflexed, armed with seven teeth above, but none below. A weak lateral crest runs from the carapace to the base of the last tooth.

Fifth abdominal segment about 1.5 times as

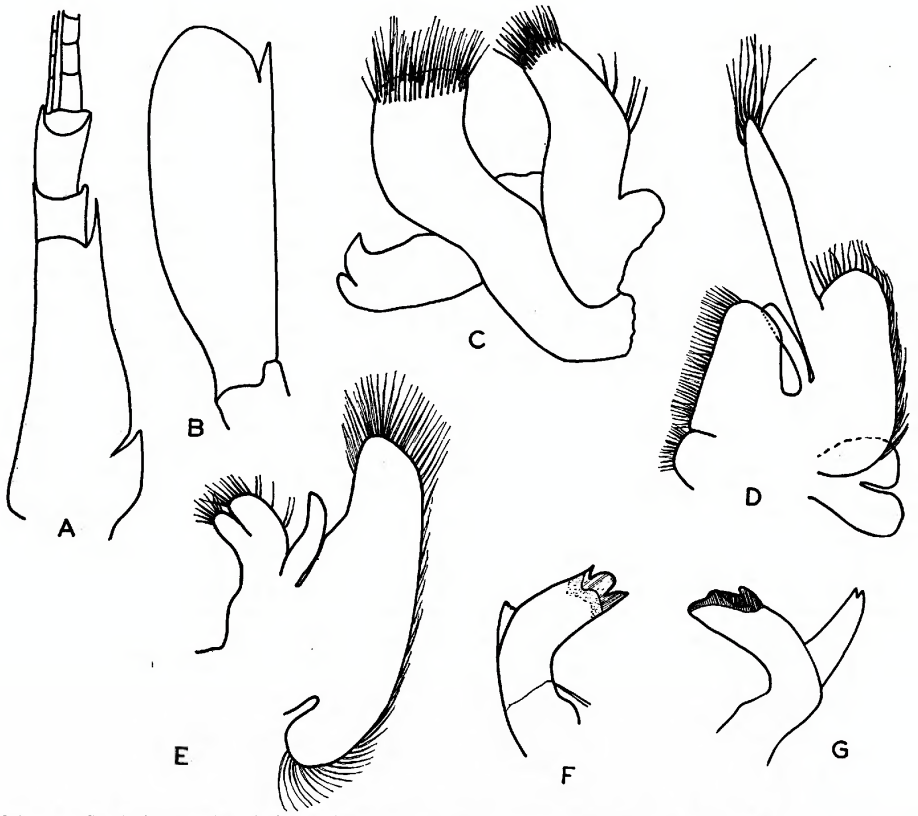

Fig. 3. *Periclimenes* (*Periclimenes*) *bermudensis*, new species. A, Antennule; B, scaphocerite; C, first maxillule; D, first maxilliped; E, second maxillule; F, mandible; G, mandible of *P.* (*P.*) *wilsoni*.

long as the 6th. Posterior margin of the 6th armed with two strong, fixed, latero-terminal spines. Telson, about 2 times as long as wide proximally, armed with five pairs of spines, three dorsal and two terminal. Dorsal spines about equidistant in longitudinal series. Proximal pair placed a little in from the margin and closer together than the two distal pairs which are situated on the lateral margins of the telson. Terminal spines equal in length.

Eyes reach to the base of the penultimate rostral tooth. Corneae hemispherical.

Lateral process of stylocerite short, blunt, reaching 0.3 the length of the first antennular segment. Terminal spine of lateral process of first segment reaching to the end of the second segment. Undivided portion of antennular flagellum consisting of 4 segments; short branch of 3.

Scale of scaphocerite 2.8 times as long as wide, falling short of last segment of antennular peduncle by about 0.5 the length of that segment. Carpocerite falls short of the first antennular segment by about 0.2 of the length of that segment.

Mandible without palp; incisor process reduced to a thin vane on the side of the mandible. The distal end of this vane is furnished with a series of minute grooves. Ultimate segment of third maxillipeds a little more than 0.5 times as long as the penultimate.

First pair of chelae small and slender. Carpus 4.3 times as long as wide; 1.15 times as long as chela. Fingers spoon-shaped at tips, 0.5 times as long as chela.

Second pair of chela large and dissimilar. Larger on the right in 3 specimens; on the left in 1. Merus of larger chela 1.5 times as long as wide; 3.2 times as long as chela. Inner edge sparsely ornamented with small tubercles. Chela 2.6 times as long as wide. Both faces with vertical rows of small very low tubercles. Fixed finger with a plunger and dactylus with a socket. Fingers about 0.4 of the length of the chela. Merus of smaller chela 2 times as long as wide; 0.38 times as long as chela. The inner edge is sparsely ornamented with small tubercles. Chela 3 times as long as wide. The slender fingers, whose tips cross when closed are 0.58 of the length of the chela

Merus of third leg 3.9 times as long as wide. Propodus with 6 slender lateral spines on posterior margin. Dactyl of last 3 legs biunguiculate, the terminal claw being the longer.

DISCUSSION.—In the species of *Periclimenes* for which this character is known, the incisor process of the mandible is well developed, usually with three or four teeth. *Bermudensis* differs from all these by the reduction of this process to a mere vestige. At first sight this might seem to be of generic value. However, an examination of the form described by Hay (1917, p. 71) as *Coralliocaris wilsoni* shows that this species, which properly belongs in *Periclimenaeus*, has an incisor process on the mandible (Fig. 2 G) which, while still functional, is considerably reduced. The mandibular structure of the remaining three species of subgenus *Periclimenaeus* is unknown. Considering, therefore, the existence of the apparently intermediate structure of the mandible in *wilsoni* and that *bermudensis* otherwise closely resembles the described species of *Periclimenaeus*, it would seem advisable to place it in that subgenus rather than erect a new one for its reception.

Among the described species of *Periclimenaeus*, *bermudensis* most closely resembles *P. fimbriatus* Borradaile, 1915, p. 213, from the Maldive Islands in the Indian Ocean. From this species it may be separated by the following characters. The propodi of the last three legs bear only the lateral series of spines in *bermudensis*, the distal end being unarmed, while in *fimbriatus* the distal end is furnished with a series of 9 long spines. The dactyls of these legs have the terminal tooth longer and stronger in *bermudensis* while in *fimbriatus* the proximal exceeds the distal. The telson of *bermudensis* is shorter and wider than that of *fimbriatus* which is 3 times as long as the width of the proximal base. The arrangement of the dorsal spines also differs; those of *bermudensis* being longitudinally equidistant while those of *fimbriatus* have the longitudinal distance between the middle and the distal pair over two and a half times as great as that between the proximal and the middle pair. Also in *bermudensis* the proximal pair of spines are set closer together than the middle pair; in *fimbriatus* it is the latter that are the closer together.

GNATHOPHYLLIDAE

GNATHOPHYLLUM LATREILLE

Gnatophyllum LATREILLE, 1819, Nouv. Dict. Hist. Nat., XXX, p. 72.

Gnathophyllum DESMAREST, 1823, Dict. Sci. Nat., XXVIII, pp. 322, 323, 423.

Gnatophyllum GUÉRIN, 1825, Ency. Meth., X, p. 328. LATREILLE, 1825, Regne d'Anim., p. 280.

Gnathophyllum AUDOUIN, 1825, Dict. Class. Hist. Nat., VII, p. 396.

Drimo RISSO, 1826, Hist. de l'Europe Merd., V, p. 71, Pl. I, fig. 4.

Gnatophyllum BETHOLD, 1827, in Latreille, Nat. Fam. Thierr., p. 267 (text). (*Gnathophyllum* in index, p. 577.)

Gnathophyllum LATREILLE, 1829, in Cuvier's Regne d'Anim., 2d Ed., IV, p. 96; 1831, Cours d'Ento. lme. Anne, p. 382.

Gnatophilum Cocco, 1832, Effem. Sci. Lett. Sicila, II, p. 204.

Gnathophillum H. M. EDWARDS, 1837, in Cuvier's Regne d'Anim., Diciples' Ed. Atlas, Pl. 52, fig. 2.

Gnathophyllum H. M. EDWARDS, 1837, Hist. Nat. des Crust., p. 369.—LUCAS, 1840, Hist. Nat. des Crust., p. 186; 1845, Dict. Univ. d'-Hist. Nat., XVI, p. 247.—BORRADAILE, 1917, Trans. Linn. Soc., (2) XVII, p. 409.

Drimo PESTA, 1918, Die Decapoden Fauna der Adria, p. 141.

Gnathophyllum DE MAN, 1920, Siboga Exped. Mongr., XXXIXa3, p. 188.

I believe that, in spite of the fact that the original spelling, *Gnatophyllum*, appears again in a work of Latreille's two years after Desmarest's emendation of the name, the original form of the name had best be regarded as a *lapsus calami*. This work of Latreille's in 1825 gives little more than a list of such animals and he consistently follows the emended spelling in all his later writings. The more correct transliteration has been generally used since Desmarest and there would seem to be little reason to revert to the use of Latreille's original form. As early as 1837, H. M. Edwards placed *Drimo* in the synonymy of *Gnathophyllum* and there would seem to be no valid reason for Pesta's revival of the name in 1918.

Latreille erected this genus to receive Risso's *Alpheus elegans* and *A. tyrrhens*. *Elegans* remains as the genotype while *tyrrhens* has been removed to the genus *Pontonia* Latreille.

The next species to be described was *americanum* by Guérin in 1856 (p. 20), from Cuba, a species clearly distinct from *elegans*. *Americanum* was shortly described

again under the name of *fasciolatum* by Stimpson in 1860 (p. 28), his species being based on material from the Hawaiian Islands, and by Richters from Mauritius under the name of *zebra* in 1880 (p. 161). In 1887 (p. 1033) Gourret described a species from Marseilles under the name of *G. elegans* var. *brevirostris*. This form apparently deserves to rank as a separate species and may be more closely related to Nobili's *tridens* than to *elegans*. *Americanum* is described once again in 1890 by Ortmann (p. 537) as *G. pallidum*, this species being based on a specimen from Tahiti which had been so bleached in alcohol as to lose its characteristic color pattern and lead Ortmann to give this colorless appearance as a distinguishing character. Faxon in 1893 (p. 198) described *panamense* from a specimen collected by the "Albatross" in Panama and gives an excellent color figure of this gaily colored species, which does not seem to have been taken since that time, in the later full report on the "Albatross" collection (1895). Another rare form *tridens*, similarly unknown since its original capture, was described by Nobili from the Island of Rikitea in 1906 (p. 259). The last species to be described was *modestum*, from North Carolina, by Hay in 1917 (p. 71). This was based on a single specimen and has not to my knowledge been seen since. To these is now added a new species, *minuscularium*, from the Bermudas.

I have attempted to construct a key to these seven species, but as I have personally examined only three of them (*elegans*, *americanum* and *minuscularium*), and as the descriptions of some forms are very brief and inadequate, it is necessarily somewhat imperfect.

I have compared specimens of *americanum* from the Pacific and the West Indies and can find no significant difference between these forms. Therefore, although Borradaile, 1917 (p. 409), and de Man, 1920 (p. 189), conserved the name *fasciolatum* for the Pacific form, I must agree with Nobili, 1907 (p. 365), and with Rathbun, 1901 (p. 126), in considering *fasciolatum* identical with *americanum*.

It is difficult to separate *modestum* and *elegans* adequately on the basis of Hay's diagnosis. He merely states "a careful comparison of the Beaufort specimen . . . . with *G. elegans* shows it to be distinct" and gives no detailed comparison between these species. He further states, "It (*modestum*) differs from all hitherto described species, however, in the arrangement of the spines at the tip of the telson." In the text he gives the number of telson spines as consisting of 2 marginal and 6 terminal. His figure, however, shows the five pairs customary for the genus; the outer terminal pair being evidently the posterior marginal pair which have retreated so far posteriorly as to seem to belong to the terminal set. Of the three pairs properly belonging to the tip, the middle pair is drawn as the longest as is usual in *Gnathophyllum*. I have seen a male specimen of *elegans* from Naples in which the posterior marginal pair of spines had retreated to such a position as to give an appearance approximating that in Hay's figure. I think, therefore, that we must assume that in writing his description Hay overlooked the minute pair of spines lying inside the long pair and that this character will not suffice to differentiate his species from *elegans*. However, his figure shows the rostrum completely unarmed below while *elegans* always has one or two small sub-terminal spines on the lower border of the rostrum.

KEY TO THE SPECIES OF *Gnathophyllum*

1.—Rostrum with 3 teeth on upper margin . . . 2.
Rostrum with more than 3 teeth on the upper margin . . . . . 3.

2.—First tooth of rostral series behind orbital margin: regularly marked with small round spots of a lighter color on a brick-red ground color (Marseilles) . . . . *brevirostris*.[1] (Gourret, 1887, Comptes Rendu, Pt. II, p. 1033: full description in Gourret, 1888, Ann. Mus. Marseilles, III, Zool., p. 120, Pl. IX, figs. 5–17.)
First tooth of rostral series in front of orbital margin: striped with numerous narrow vertical brown bands (Rikitea) . . *tridens*. (Nobili, 1906, Bull. Mus. Hist. Nat. Paris, XII, p. 259: full description in Nobili, 1907, Mem. Roy. Acc. Sci. Torino, (2) LXVII, p. 365, Pl. I, fig. 4.)

3.—First tooth of rostral series behind orbital margin . . . . . 4.

[1] *rectirostris* on plate.

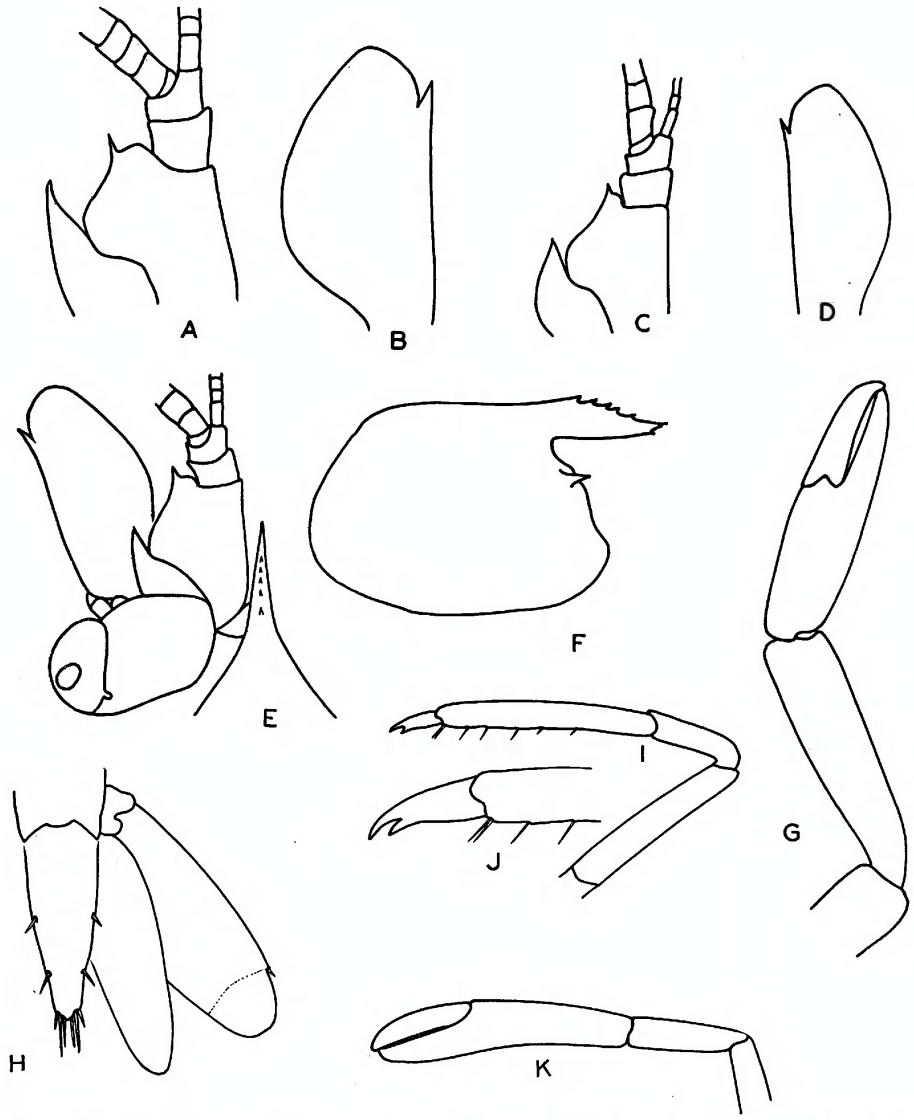

Fig. 4. *Gnathophyllum americanum* Guérin. A, Antennule; B, scaphocerite. *Gnathophyllum minuscularium*, new species. C, Antennule; D, scaphocerite; E, frontal structures; F, carapace in lateral view; G, left chela of first (smaller) pair; H, telson and uropods; I, third leg; J, dactyl of third leg; K, right chela of second (larger) pair.

First tooth of rostral series in front of orbital margin.....6.

4.—Long spines at tip of telson not more than one-fourth as long as telson.....5.
Long spines at tip of telson about one-half as long as telson (Panama)...*panamense*. (Faxon, 1893, Bull. M.C.Z., XXIV, p. 198.)

5.—Rostrum unarmed below (N. Carolina).....*modestum*. (Hay, 1917, Proc. Biol. Soc. Wash., XXX, pp. 71–74.)
Rostrum with 1 or 2 teeth below (Mediterranean).....*elegans*. (Risso, 1816, Crust. Nice., p. 92, Pl. II, fig. 4.)

6.—Fingers of second pair of chela unarmed (Bermuda).....*minuscularium*, n. sp.
Fingers of second chela with two small teeth on the inner edge (circumtropical).....*americanum*. (Guérin, 1858, in La Sagra's Hist. Cuba, Pt. 2, VII, Crustaceos, p. 20; VIII, Atlas, Pl. II, fig. 14.)

Gnathophyllum minuscularium, new species

Figure 4 C–K

TYPE.—1 ♀ ovig. (Cat. No. A.M.N.H. 8192), taken at surface during the late evening, just after dark, in the Reach, St. George Isl., Bermuda. Carapace, 2 mm. Total length, about 7 mm.

PARATYPES.—2 ♀ ovig. (Cat. No. A.M.N.H. 8193). Same locality as above.

DESCRIPTION.—Carapace stout, with strong antennal spine. Rostrum short, about 0.6 of the length of the carapace as measured dorsally from the base of the rostrum, armed above with 5 teeth and a minute sub-terminal tooth below. The first tooth of the rostral series is placed a little in front of the orbital margin.

Telson, 2.5 times as long as its proximal width, armed with 5 pairs of spines; 2 dorsal and 3 terminal. Anterior dorsal pair placed about midway along the telson; the posterior about half way between these and the end of the telson. Both pairs inserted marginally. Middle pair of terminal spines longest; outer pair shortest.

Eyes reaching to about the end of the second antennular segment. Cornea hemispherical, not larger in diameter than the eyestalk and furnished with a small papilla at the tip.

Stylocerite reaching about 0.75 the length of first antennular segment. First antennular segment (excluding the stylocerite) 0.75 as wide as long. Terminal spine of first antennular segment reaching to end of second antennular article. Second and third antennular segments equal in length and each 0.25 the length of the first. Undivided portion of outer antennular flagellum consisting of 3 segments, the short branch being part of the fourth article.

Scaphocerite nearly 2.5 times as long as wide.

First pair of chelae small and slender. Carpus 3.5 times as long as wide; 0.9 times as long as chela. Chela 3.4 times as long as wide. Fingers with tips crossing when closed; 0.4 of the length of the chela.

Second pair of chelae larger than first. Carpus 3.2 times as long as wide; 0.4 times as long as chela. Chela 5.3 times as long as wide. Fingers with straight, unarmed inner edges, 0.37 of the length of chela.

DISCUSSION.—This species resembles *americanum* in the number and arrangement of the rostral teeth but may be distinguished by the following characters. The first segment of the antennule of *minuscularium* is narrower and the stylocerite shorter than in *americanum*. This difference is best shown by figure 4 A to D. The second pair of chelae in *minuscularium* have the fingers unarmed while in *americanum* they bear two small teeth. The telson, 2.5 times as long as wide, is narrower than that of *americanum;* that of the latter being 2 times as long as wide proximally in adults and even wider in the young. *Minuscularium* also resembles *modestum* by its small size and feeble second chelae. It may be at once distinguished, however, by the rostrum which in *modestum* has the first rostral tooth set well back of the orbital margin.

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